

What is Autoimmune Disease

- Triggered Immune System
- Two Categories
 - Systemic
 - Rheumatoid arthritis
 - Lupus
 - **Localized**
 - Type 1 Diabetes
 - Chrohn's
- Most common category of disease after cancer and heart disease
- More than 80 diseases (15 are known to be a direct result classified by US NIH)

5-8 of population

More than 75% are

(they are 1 of top 10 killers for)

Causes:

- genetics + trigger (virus, bacteria drug)
- infections trigger **drug** not a one on one thing

Some Diseases

1. Type I Diabetes
2. Rheumatoid Arthritis
3. Chron's
4. Psoriasis
5. Celiac
6. Itashimoto's
7. Sjogren's
8. Graves
9. Mysthenia Gravis
10. Vitiligo
11. CFID's/Fibro
12. Myocarditis

- hormones (75% women)
- nutritional deficiencies
- environmental toxins

Dr. Wu's Diagnosis:

- endocrinologist
- rheumatologist

Treatment:

- **Replacement Therapies:**
- insulin (type 1 diabetes)
- thyroid (Hashimoto's)
- gluco **Aicoids**/mineral corticoids (Addison's)
- blood (hemolytic anemia)

Pain Control:

- NSAIDS
- STEROIDS

Immunosuppression:

- chemotherapies

- TNF inhibitors

Women:

- Women produce more vigorous immune response/increased antibody production
- When men get them they are worse
- Sex hormones (estrogen, testosterone, progesterone) may mediate these sex based differences
- Estrogen/androgens influences Th 1 and Th 2 type immune response by interacting with hormone receptors on immune cells
- Immune cells have these receptors for hormones
- Cytokine receptors have also been found on hormone producing tissues
- Estrogen Increases:
 - pro-inflammatory cytokines such as TNF-a and IL-1 Beta stimulate the release of glucocorticoids from hypothalamus-pituitary-adrenal axis which regulates inflammatory process, along with androgens-estrogens
- Animal studies link infection and hormone - pro-inflammatory cytokines

Immunosuppression:

- Feds want against dangers of (especially fungal):

Humira	TNF-alpha blockers
Embrel	(Lumor necrosis factor alpha blochers)
Cimzia	
Remicaid	

- Approves for RA, juvenile idiopathic diabetes psoriatic arthritis, plaque psoriasis ankylosing spondylitis and chrones

“Black Box Warnings”- these are often fatal 20% of the time

fungal infections
 histoplasmosis
 coccididomycosis
 blastomycosis

- Other problems are being reviewed
 - cancer, esp. lymphoma

Rheumatoid Arthritis

- 70-80% of people have rheumatoid factors this helps distinguish RA from inflammatory arthritis from psoriasis, IBS, or infectious disease
- Immune system attacks tissue lining joints
- First occurs mostly in middle age

SX

- Constant or recurring pain in joints
- Stiffness, loss of range of motion
- Swelling
- Heat/redness
- Symmetrical pattern bilaterally
- Weight loss
- Low grade fever
- Fatigue
- Worse in am

Causes

- Runs in families (genetic), more in women. HLA-Dr genes (instrumental in identifying/killing foreign antigens - may be implicated)
- Maybe viral - lymphocytes might produce antibodies against a bacterial product that also reacts against a connective tissue protein

Progression

- Synovium/other cells produce
cytokines

chemical mediators
proteolytic enzymes

- Destroy joint proliferation of synovium - pannus (rough grainy tissue) - grows into joint cavity
- Erodes cartilage
- Tendons may shorten - fusion of bones - rupture - floppy joints
- Inflammatory nodules may appear - and infect
- Vasculitis can occur - poor circulation to limbs, eye conditions
- Ligaments that hold upper vertebrae in place are damaged - subluxation - spinal cord damage

TX

NSAIDS/COX 2 inhibitors

DMARDs

Biological Response Modifiers (anti TNF)

Corticosteroids